

REMARKS

The Examiner is thanked for his careful and very thorough Office Action. The Examiner is particularly thanked for the helpful suggestions regarding correction of the alleged informalities.

Claims 1-3 and 5-8 have been rejected. By the foregoing amendments, various claims are sought to be amended or canceled without prejudice.

Please cancel Claim 4 without prejudice or disclaimer.

The amendments to Claims 1 and 5 are not intended to be substantive and are being amended for clarification purposes.

Claims 9-30 have been added. Support for Claims 13, 14, 16, 19, 20, 22, 23, 25, 28, and 29 is essentially the same as that for Claims 1-4, but the added claims are directed to methods and systems according to the disclosure of the application as filed. Support for Claims 9, 15, and 24 can be found for example in paragraph [0014]. Support for Claims 10, 11, 12, 17, 18, 21, 26, 27, and 30 can be found for example in paragraph [0026]. The new claims are respectfully asserted not to introduce new matter, and their entry is respectfully requested.

The foregoing amendments to the specification are submitted to improve clarity, and to remove various typographical and other minor informalities. These changes are respectfully asserted not to introduce new matter, and their entry is respectfully requested.

Art Rejections

The art rejections are all respectfully traversed.

Rejections Under 35 USC 102(b)

Claims 1-3 and 5-8 stand rejected under 35 USC Section 102(b) as anticipated by *Wong et al.*

Wong relates to a method or apparatus for providing video graphics that includes anti-aliasing.

The claim language of amended Claim 1 is not met. Specifically, Claim 1 now recites "wherein said determination is made without the use of an error term or per pixel decisions." As stated by the Examiner, *Wong* determines which orientation class the line falls into by edge walking and using an error term and threshold value.

In contrast:

The idea in this patent is to use a sub-pixel sampling pattern which is different for x-major and y-major lines. These two patterns are then chosen to optimize the quality of the line type for which they are used. This leads to increased visual quality of the line without adding in more sample points.

FIG. 1 shows an example of using different sampling patterns for x- and y-major lines. Each sample pattern has four sub-pixel points. Four is chosen as this gives good performance. In the case of the x-major line 102, using a vertical sampling pattern (black dots) shows 2 samples being covered by the line, giving 50% coverage of the pixel. This is a reasonable approximation. For the same line 102 a horizontal sampling pattern (striated dots) gives us no coverage which is incorrect. Similarly, for the y-major line 104, the vertical sampling pattern (black dots) incorrectly gives 100% coverage whereas the horizontal pattern (striated dots) gives reasonably accurate coverage of 75%.

For any arbitrary pattern, line orientations can be chosen that show this pattern favoring either x-major or y-major lines but not accurately handling both. The idea of using two different patterns yields superior anti-aliased results for all lines.¹

Of course, this text in the specification does not define the scope or interpretation of any of the claims, which speak for themselves. This new technique for rendering antialiased lines does not require calculations made on a pixel-by-pixel basis or the use of an error term. This allows for fast and economical antialiased rendering with superior anti-aliased results for all lines.

According to the Federal Circuit:

For a prior art reference to anticipate a claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in the prior art.²

Accordingly, Applicant respectfully requests withdrawal of this rejection.

Amended Claim 5 also recites features not shown or suggested by *Wong*. Specifically, Claim 5 now recites **"wherein said identification is made without the use of an error term or per pixel decisions."** As stated by the Examiner, *Wong* requires pixel by pixel calculations and the use an error term and threshold value to determine which direction is most parallel to the line being rendered. The present application does not require the use of pixel by pixel calculations or the use of an error term or threshold value. This leads to increased visual quality of the line without adding in more sample points.

¹ Paragraphs [0025] to [0027].

² *Motorola, Inc., v. Interdigital Tech. Corp.*, 43 USPQ 2d 1481, 1490 (Fed. Cir. 1997).

Dependent Claims 2-3 and 6-8 depend directly from independent Claims 1 and 5 and incorporate all the limitations thereof.

Thus, for this reason, and for the reasons discussed above, Applicant respectfully requests withdrawal of this rejection.

Conclusion

Thus, all grounds of rejection and/or objection are traversed or accommodated, and favorable reconsideration and allowance are respectfully requested. The Examiner is requested to telephone the undersigned attorney or Robert Groover for an interview to resolve any remaining issues.

Respectfully submitted,



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